

Comparisons of Job Characteristics

Focus Occupation: [Mechanical Engineers \(17-2141\)](#)

Associated Occupation: [Mechanical Engineering Technicians \(17-3027\)](#)

[Compare Knowledge](#)

[Compare Skills](#)

[Compare Abilities](#)

[Compare Detailed Work Activities](#)

[Compare Tools and Technologies](#)

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 96

Focus Occupation: Mechanical Engineers (17-2141)

Associated Occupation: Mechanical Engineering Technicians (17-3027)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Mechanical	6.8	18.0	18.1	0	Current knowledge level may be sufficient
Engineering and Technology	5.7	16.1	21.5	>>	Current knowledge level is likely more than sufficient
Design	5.2	15.1	21.0	>>	Current knowledge level is likely more than sufficient
Production and Processing	6.0	12.6	14.2	>	Current knowledge level is likely sufficient
Physics	4.3	10.2	15.3	>>	Current knowledge level is likely more than sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 55

Focus Occupation: Mechanical Engineers (17-2141)

Associated Occupation: Mechanical Engineering Technicians (17-3027)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Operation Monitoring	6.6	10.7	10.4	0	Current skill level may be sufficient
Quality Control Analysis	5.9	10.2	11.1	0	Current skill level may be sufficient
Operation and Control	5.4	9.0	5.0	<<	Extensive development of skills in this area may be required
Troubleshooting	4.5	7.3	9.5	>	Skill level is likely sufficient
Equipment Maintenance	3.5	6.8	4.5	<<	Extensive development of skills in this area may be required
Repairing	3.4	6.6	3.6	<<	Extensive development of skills in this area may be required
Equipment Selection	3.3	6.2	6.5	0	Current skill level may be sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities		Similarity of Focus Occupation to Associated Occupation: 83			
Focus Occupation: Mechanical Engineers (17-2141)					
Associated Occupation: Mechanical Engineering Technicians (17-3027)					
Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Category Flexibility	9.0	10.7	12.7	>	Current ability level is likely sufficient
Control Precision	6.6	10.2	1.6	<<	Extensive improvement in abilities may be required
Visualization	7.5	10.2	12.7	>	Current ability level is likely sufficient
Number Facility	6.3	9.7	13.0	>>	Current ability level is likely more than sufficient
Perceptual Speed	7.4	9.6	10.6	>	Current ability level is likely sufficient
Visual Color Discrimination	6.4	9.2	9.1	0	Current ability level may be sufficient
Wrist-Finger Speed	3.2	5.5	1.2	<<	Extensive improvement in abilities may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common		Similarity of Focus Occupation to Associated Occupation: 90
Focus Occupation: Mechanical Engineers (17-2141) Associated Occupation: Mechanical Engineering Technicians (17-3027)		
Work Activities	Exclusivity of Activity	
Analyze engineering design problems	69	
Analyze engineering test data	71	
Analyze technical data, designs, or preliminary specifications	47	
Calculate engineering specifications	64	
Communicate technical information	4	
Conduct performance testing	66	
Confer with engineering, technical or manufacturing personnel	25	
Develop plans for programs or projects	31	
Diagnose mechanical problems in machinery or equipment	65	
Draw prototypes, plans, or maps to scale	57	
Estimate cost for engineering projects	69	
Evaluate engineering data	60	
Examine engineering documents for completeness or accuracy	62	
Follow manufacturing methods or techniques	73	
Follow statistical process control procedures	73	
Inspect facilities or equipment for regulatory compliance	51	

Prepare technical reports or related documentation	22
Read blueprints	10
Read schematics	34
Read technical drawings	7
Read vehicle manufacturer's specifications	76
Test equipment as part of engineering projects or processes	67
Understand engineering data or reports	48
Use drafting or mechanical drawing techniques	50
Use robotics systems technology	78
Use scientific research methodology	21
Use technical information in manufacturing or industrial activities	67
Use technical regulations for engineering problems	61

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus
Occupation to Associated
Occupation: 80

Focus Occupation: Mechanical Engineers (17-2141)

Associated Occupation: Mechanical Engineering Technicians (17-3027)

Tools and Technologies	Exclusivity
Business function specific software	1
Cement and ceramics and glass industry machinery and equipment and supplies	40
Chemical evaluation instruments and supplies	10
Compressors	9
Computer data input devices	2
Computer printers	2
Computers	1
Content authoring and editing software	1
Development software	4
Electrical measuring and testing equipment	7
Electronic and communication measuring and testing instruments	14
Gas analyzers and monitors	10
Heating equipment and parts and accessories	19
Indicating and recording instruments	2
Industry specific software	1
Integrated circuits	18
Laboratory environmental conditioning equipment	24
Length and thickness and distance measuring instruments	2
Light and wave generating and measuring equipment	4
Liquid and gas flow measuring and observing instruments	15
Machine tools	7
Machinery for working wood and stone and ceramic and the like	12
Mechanical instruments	14
Metals and metallurgy and structural materials testing instruments	15

Non destructive examination equipment	13
Power tools	2
Soldering and brazing and welding machinery and supplies	6
Transducers	23
Viewing and observing instruments and accessories	4

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.